CW#83H: Quadratic Word Problems

Honors Geometry

Wednesday, February 17th, 2016

*Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PD:\_\_\_\_\_\_*

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| 1. An arc of water sprayed from the nozzle of a fountain can be modeled by the graph of   where *x* is the horizontal distance (in feet) from the nozzle and *y* is the vertical distance (in feet). The diameter of the circle formed by the arcs on the surface of the water is called the display diameter. Find the display diameter of the fountain. |
| 1. Two softball players are practicing catching fly balls. One player throws a ball to the other. She throws the ball upward from a height of 5.5 feet with an initial vertical velocity of 40 feet/second for her teammate to catch.    1. Write an equation that models the height (in feet) of the ball as a function of time t (in seconds) after it is thrown.    2. If her teammate misses the ball and it lands on the ground, how long was the ball in the air?    3. If her teammate catches the ball at a height of 5.5 feet, how long was the ball in the air? Explain your reasoning. |
| 1. Fenway Park is a Major League Baseball park in Boston, MA. The park offers seats on top of the left field wall. A person sitting in one of these seats accidentally drops his sunglasses on the field. The height h (in feet) of the sunglasses can be modeled by the function where t is the time (in seconds) since the sunglasses were dropped. Find the time it takes for the sunglasses to reach the field. Round your answer to the nearest hundredth in second. |
| 1. For the period 1995 – 2001, the number *y* (in thousands) of Internet users worldwide can be modeled by the equation where *x* is the number of years since 1995. Between which two years did the number of Internet users worldwide reach 100,000,000? |
| 1. An object is launched directly upward at 64 ft/s from a platform 80 feet high. What will be the object's maximum height? When will it attain this height? |
| 1. After the semester is over, you discover that the math department has changed textbooks (again) so the bookstore won't buy back your nearly new book. You and your friend Herman come up with a creative way to get rid of your textbooks. You go to the roof of a twelve-story building and look over the edge to the reflecting pool 160 feet below. You drop your book over the edge at the same instant that Herman chucks his book straight down at 48 feet per second. By how many seconds does his book beat yours into the water? |